Alabama IMPACT

Indicators for

Measuring

Progress in

Advancing

Classroom

Technology

Phase II:
Alabama Technology Plan for K-12 Education

2002-2005

Bulletin 2002
No. 50

Sponsored by the
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"In this world of rapid change, where information is expanding exponentially and increasing in complexity, learning is a survival skill. Mastering the basics—reading, writing, and arithmetic—is as important as ever, but is no longer enough. Today's students need to learn more than previous generations. They need to know how to find and use new information, to make informed decisions about complicated issues, and to collaborate as part of a team. Since the pace of change shows no signs of slowing in the future, students also need to learn how to learn."

~ The George Lucas Educational Foundation[i]

ACKNOWLEDGEMENTS

The Alabama Department of Education, Office of Technology Initiatives thanks the following representatives of the local boards of education for their assistance in the creation of this document.

Kim Adkins—Haleyville City Schools
Matt Akin—Piedmont City Schools
Kay Argo—Governor's Office
Dr. David Asbury—Gadsden City Schools
Margaret Blake—Mobile County Schools
Betty Brackin—Washington County Schools
Linda Carroll—Troy City Schools
Dr. David Crouse—Roanoke City Schools
Golda Donaldson—Coffee County Schools
Charlotte Douglas—Dothan City Schools
Dr. Chris Hamilton—Athens City Schools
Gary Harper—Andalusia City Schools
John Heard—Perry County Schools
Dr. Linda Ingram—Coffee County Schools
Chiquita Marbury—Jefferson County Schools, Technology in Motion
Beverly Massa—Madison County Schools
Beth McDavid—Tarrant City Schools
Jaunita Owes—Montgomery Public Library
A. J. Price—Alexander City Schools
Fran Pridgeon—Baldwin County Schools
Kathy Rains—Madison City Schools
Jane Smith—Tuscaloosa County Schools
Cynthia Stephenson—Tuscumbia City Schools
Dan Vertrees—Alabama State University
Donna Williamson—Mountain Brook City Schools
Robert Youngblood—Alabama On-Line High School

The Office of Technology Initiatives Staff: Dr. Melinda Maddox, Kathy Birdnow, Jerome Browning, Jim Harris, Ouida Myers, Denise Oliver, and Dr. Shannon Parks.

PREFACE

The state of Alabama has made great strides toward obtaining technology resources for schools over the past decade. In order to continue the transformation to a technology-literate society, the term "learner" must be redefined to incorporate all people who are a part of the school environment. The term "learner," as referred to in this document, includes teachers, students, administrators, support staff, parents, and the community at large. Rapid changes in technology necessitate that we move to a more collaborative structure for learning.

As Alabama enters the new millennium, we must integrate new technologies into learning environments wherever students are actively engaged in dynamic, vibrant learning activities with other "learners." The entire school will be included in this process. It is with this idea in mind that the *IMPACT (Indicators for Measuring Progress in Advancing Classroom Technology)* document was created as a planning guide for schools and districts.

The foundation of the *IMPACT* document is based on three basic principles: When learning can be observed, it can be measured. When learning can be measured, it can be improved. When learning can be improved, students benefit from the best of what education has to offer. Alabama's students deserve the best.

This document will provide assistance to integrate effectively technology into the classroom to enrich the process of teaching and learning.

CONTENTS

BACKGROUND

During the fall of 1996, the Alabama State Technology Plan was designed and implemented to provide guidelines for technology leaders to install networks, provide training, and set standards for district technology plans. The plan served as the centerpiece for technology initiatives across Alabama. Most school systems have achieved the goals outlined in the last four-year plan and are now poised to focus on learning goals using technology tools that are in place.

Goals 2000, the Technology Literacy Challenge Fund, E-Rate, local appropriations, and funds allocated by the Alabama Legislature have been used by school districts in Alabama to build networks, purchase hardware, and provide professional development. The Office of Technology Initiatives (OTI), Alabama Department of Education, provided direction for the implementation of Phase I of the Alabama State Technology Plan through professional development in networking and planning, telephone, email, on-site consultation, annual review of district technology plans, and the comprehensive monitoring review process.

A variety of learning resources have set the stage for extending learning capacity in all schools, regardless of location or economic factors. Statewide initiatives for learning and using technology encompass a range of programs and resources:

- Alabama Educational Technology Conference (AETC)
- Alabama Virtual Library (AVL)
- MarcoPolo
- Teens and Teachers Teaming for Technology (T^4)
- Technology in Motion (TiM)
- Webcasts - Professional Development for Classroom Teachers
- Alabama Renaissance Technology Academy, "Bill and Melinda Gates Leadership Grant"
- $AlaPT^3$ Catalyst Grant, "Preparing Tomorrow's Teachers to Use Technology"
- Alabama On-Line High School
- Alabama Research and Education Network (AREN)

Alabama's schools are ready for the next step, integration of technology into the classroom to enhance learning.

PURPOSE

The purpose of *IMPACT* is to provide recommendations for using technology as a tool for learning in Alabama's schools. *IMPACT* represents a shift from the emphasis on installing hardware and networks to integrating fully technology into the curriculum. Although the work contained in this guide contains the essential conditions necessary to use technology such as funding, support, and training, the primary focus of *IMPACT* is learning. The reason for networks, Internet connections, and computers in the classroom is to impact positively the learning experience for all of Alabama's students.

VISION

In 1775, Samuel Johnson wrote, "Knowledge is of two kinds: we know a subject ourselves, or we know where we can find information upon it." The tools for finding and communicating information, however, have changed dramatically. Our schools were once physical places where the teacher dispensed ideas and students then recited back what had been learned. Students and teachers must now adapt to new models for learning if Alabama is to continue to thrive. Our future depends upon how schools educate young people in Alabama, using the learning tools of the 21st century: the tools of technology.

Technology Tour

What does teaching using the tools of technology look like in an Alabama classroom?

Alabama Public School: The Vision

Visitors to Alabama Public School hear repeatedly from the principal and other learners that the school exists as a space where students explore, make comparisons, constantly share what they are learning, reach deep understandings of the world around them, solve real problems, and use all learning tools available to them.

Visitors witness young history students talking about the connections and differences between Brown v. the Board of Education and Nelson Mandella's fight for equality and justice and the overthrow of apartheid in South Africa. These discussions and enactment of the two trials was made possible by a review of articles, films, and interviews conducted over the Internet, through email, and using online databases in the Alabama Virtual Library.

The drama the students present is filled with passion, and the main points are underscored by students showing video clips and pictures imported into a visual presentation. Learning is alive and vivid at Alabama Public School.

Role of the Teacher

The vision just described requires teachers to see themselves as learners as well as teachers. The teacher plans the project-based learning activity, but in many respects, is learning right along with the students. The teacher/learner possesses most of the knowledge surrounding the topic, ensures that the resources are available for the students, monitors the activity, asks probing questions, and provides a forum for feedback and discussion. The teacher is modeling continuous learning, and more importantly the value of learning new ways to learn.

Role of the School Leader

The School Technology Vision is articulated by the formal leadership of the school, the principal. Principals who embrace technology as a necessary tool for learning are informal school leaders as they encourage and provide support for their colleagues to use technology creatively and effectively. The principal is the instructional leader for the entire school. S/He ensures that the Essential Conditions (page 3) are met so that teachers and students described in the scenario have the resources that they need to enrich, extend, and expand learning.

Essential Conditions

The Essential Conditions are necessary for the Vision to be realized. The principal is responsible for providing schoolwide leadership for technology.[ii]

Shared Vision	There is proactive leadership and administrative support from the entire system.
Access	Educators have access to current technologies.
Skilled Educators	Educators are skilled in the use of technology for learning.
Professional Development	Educators have consistent access to professional development in support of technology use in teaching and learning.
Technical Assistance	Educators have technical assistance for maintaining and using the technology.
Content Standards and Curriculum Resources	Educators are knowledgeable in their subject matter and current in the content standards and teaching methodologies in their discipline.
Student-Centered Teaching	Teaching in all settings encompasses student-centered approaches to learning.
Assessment	There is continuous assessment of the effectiveness of technology for learning.
Community Support	The community and school partners provide expertise, support, and resources.
Support Policies	School and university policies, financing, and reward structures are in place to support technology in learning.

EVALUATING THE IMPACT OF TECHNOLOGY

James Kulik's (1994) meta-analysis of more than 500 individual research studies of computer-based instruction revealed that on average, students who used computer-based instruction scored at the 64th percentile on tests of achievement. Students in the control groups without computers scored at the 50th percentile. Students learned more in less time when receiving computer-based instruction, and they liked their classes more and developed more positive attitudes when their classes included computer-based instruction.[iii]

In a review of 219 research studies from 1990 to 1997 analyzing learning and achievement across all domains and ages of learners, Jay Sivin-Kachala (1998) reported three consistent patterns. Students (both regular and special needs children) in technology-rich environments experienced positive effects on achievement in all major subject areas, showed increased achievement in preschool through higher education, and their attitudes toward learning and their own self-concept improved consistently when computers were used for instruction.[iv]

However, traditional measures of student learning, such as standardized tests, cannot fully measure the benefits students gain through the use of technology. Important values such as cooperation, independent learning, and task commitment are instilled through curriculum integration of technology. Research skills, critical thinking, and product design are enhanced as students work on open-ended, authentic tasks using technology tools. Levels of technology proficiency affect results, and proficiency takes time.[v] Continued emphasis on providing the tools Alabama's students need to develop this proficiency will assure that sufficient time is given for these positive results to be realized.

Once support is in place for technology integration, research reveals that the use of technology in the classroom:

- ✓ Leads to success in advanced courses as well as to gains in the higher-order skills of synthesizing different points of view, understanding the scientific method, and solving complex operations, such as multi-step word problems;
- ✓ Transforms educational content, instructional delivery, and learner enjoyment of and motivation toward lifelong learning;
- ✓ Enhances avenues for collaboration among family members, faculty, and the school community at large;
- ✓ Captures and stores information for data-driven decision making in a timely manner; and
- ✓ Allows a teacher to customize and individualize curriculum according to needs and interests of learners.[vi]

With these additional benefits in mind, Alabama educators need a cohesive plan as they move forward into the curriculum integration phase of technology implementation. This plan should provide for evaluation of effective technology use in the classroom through the use of progress indicators that are defined and measured. These progress indicators serve as:

- ✓ A vision for stakeholders (educational community, parents and the general public) that helps in defining expectations for their investment in K-12 learning technology;
- ✓ A self-assessment tool that assists schools, districts and states in gauging their own progress toward that vision;
- ✓ A planning tool for strategizing how to bring technology and telecommunications into their systems in ways that improve student learning;
- ✓ An accountability system for decision makers in tracking the return on public investments in education technology; and
- ✓ A research agenda for guiding studies of how and under what conditions technology is an effective tool for learning.[vii]

Alabama IMPACT

Alabama IMPACT provides a set of progress indicators, measures, and a target timeline (2002-2005) for integrating technology across the curriculum. Examples of Sources of Evidence/Data Collection Methods are provided to help schools and school systems assess their progress toward meeting the benchmarks established in this document.

The overarching goal of IMPACT is to improve learning through the use of technology. The six objectives support the goal and provide a framework for the design of local school and school system technology plans.

Goal: To improve learning through the use of technology.

1. *Learning Objective:* Encourage learning that is relevant and authentic through the use of technology.

2. *Technology Integration Objective:* Align the use of technology with local, state, and national content standards and curricula to enhance learning and enrich teaching.

3. *Professional Development Objective:* Provide professional development that enables staff to become and remain proficient in the use of technology to improve learning.

4. *Environment Objective:* Cultivate lifelong learning communities in which the tools of technology support learning.

5. *Access Objective:* Provide every learner with the technological tools to access and process information.

6. *Cost of Ownership Objective:* Fund technical support, maintenance, and emerging technologies to improve learning.

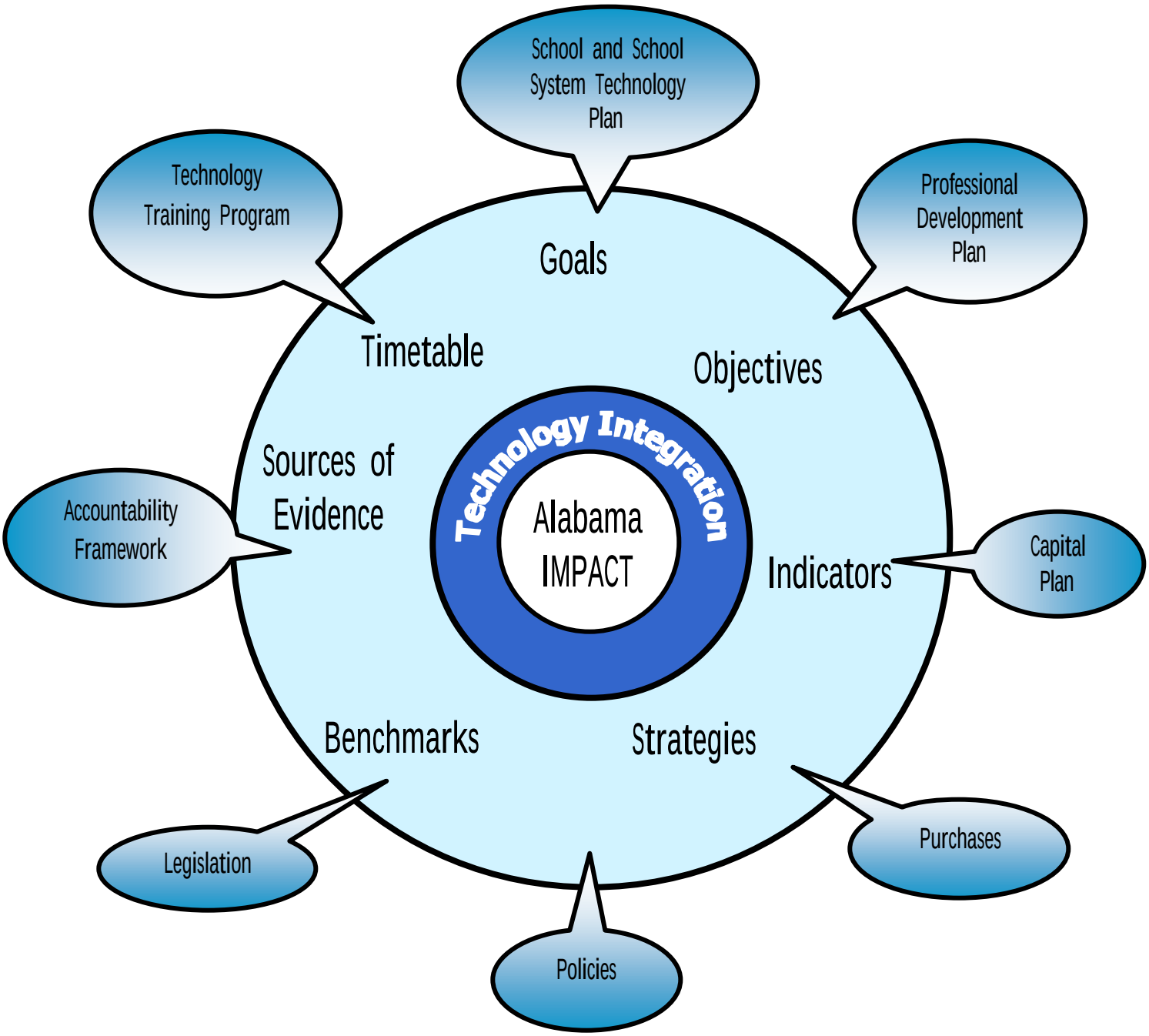
Terms

The following is a list of terms used in this document. Definitions are also supplied to clarify the meaning of the terms:

Terms	Definition
Learners	Students, Teachers, Non-certificated Staff, Administrators, Parents, Community Members, Business Owners, Citizens
Goal	The final outcome desired
Rationale	Reason for the objective
Objectives	Broad actions intended to fulfill the goal or outcome
Indicators	Attributes or activities that are necessary to fulfill the objective and overall goal. These are readily converted to benchmarks.
Benchmarks	Specific, observable, measurable actions or behaviors; used to gauge progress over time
Sources of Evidence/Data Collection Methods	Physical items, such as plans, reports, observations, etc. that enable the researcher to document fulfillment of objectives
Strategies	Steps or actions that will be taken to accomplish the objective

IMPACT Concept Map

IMPACT was created to develop a framework for technology integration in schools. This framework can be used by Local Education Agencies to design plans, make decisions, and create legislation and policies to guide the direction of technology use in schools and school systems in Alabama. The following is a concept map showing these relationships.



Goal: To improve learning through the use of technology.

1. *Learning Objective:* Encourage learning that is relevant and authentic through the use of technology.

Rationale: In classrooms where technology is used effectively as a tool, students are more autonomous, collaborative and reflective than in classrooms where technology is used only for drill and practice. Technology engages students in real-life applications of academics and encourages them to be more independent and responsible for their own learning. In a knowledge-based society, it is important that students have the self confidence, knowledge base, technology fluency, and cooperative skills that enable them to continue learning throughout their lives. Technology facilitates the study of the academics within the context of meaningful and authentic applications.

Indicators:	Benchmarks: (Target year 2005)	Examples of Sources of Evidence/ Data Collection Methods:
1a. Learners develop, model, and assess age-appropriate projects that are relevant and authentic.	1.1 All students use technology to complete inquiry-based learning projects that reflect personal significance and/or societal importance. 1.2 All teachers assess student-based projects using well-designed scoring guides. 1.3 All administrators assess teachers' ability to implement learner-centered classrooms.	Surveys Student products Lesson plans Observation Video samples Standards-based scoring guides Personnel Evaluation System (PEPE) Electronic Usage Data Online Assessments
1b. Learners' work incorporates real-world applications of technology.	1.4 All students, teachers, and administrators use productivity tools such as spreadsheets, databases, presentation software, and Internet resources to solve problems and make decisions.	Surveys Student products Lesson plans Observation

Indicators:	Benchmarks: (Target year 2005)	Examples of Sources of Evidence/ Data Collection Methods:
1c. Learners use technology resources to gather, store, reshape, analyze, and communicate information.	1.5 Student products contain a data analysis component using productivity tools such as spreadsheets, graphing packages, and/or databases. 1.6 All teachers collect and analyze data to make adjustments to their operational curriculum (i.e., classroom). 1.7 All administrators collect and analyze data to make decisions that affect the overall operation of the school.	Surveys Student projects Lesson plans Observation Structured interviews Online Assessments Electronic Usage Data
1d. Learners use technology resources to access quality information from numerous sources.	1.8 All students and teachers select appropriate technology-based resources such as the Internet, real-time probes, hand-held devices, and the Alabama Virtual Library (AVL) based on intended purpose.	Lesson plans Student projects Observation Personnel Evaluation System (PEPE)
1e. Learners are proficient in technology and information literacy standards.	1.9 All students and teachers use technology during the instructional day based on the local, state, and national standards.	Surveys Lesson plans Observation Student projects

State Strategies

1.i. Provide a State Web Portal for educators to include the following:

- An online searchable database of the Alabama Courses of Study content standards,
- Development and maintenance of an online bank of lesson plans aligned to state standards,
- Suggested ways to incorporate into lesson plans real-world applications of technology, including productivity, communication, problem-solving and decision-making tools,
- Current research and best practices in effective models of technology integration throughout the school program, and
- Establishment of web-based communities linking educators to share ideas on issues of immediate concern such as connecting higher education faculty and other outside experts to K12 educators in need of assistance.

1.ii. Disseminate examples of effective project-based learning programs incorporating the use of technology, throughout the State via a Web portal and through other Department initiatives such as Teens and Teachers Teaming for Technology (T^4), ThinkQuest, Alabama Educational Technology Conference (AETC), Technology in Motion (TiM), and videoconferencing.

1.iii. Implement K12 Technology Course of Study content standards in all Alabama public schools and incorporate the Alabama Course of Study: Technology Education content standards into all Alabama Courses of Study.

1.iv. Collaborate with other state and federal initiatives, such as the Alabama Reading Initiative (ARI) and the Alabama Math Science and Technology Initiatives (AMSTI) to include the effective use of technology.

1.v. Develop and deliver an online school system (Local Education Agency) comprehensive needs-assessment framework through a statewide intranet.

1.vi. Provide access to distance and online learning for all learners, especially high need learners, through technology-based programs, such as Alabama Virtual Library (AVL), Alabama Learning Exchange (ALEX), Alabama On-Line High School, and MarcoPolo.

1.vii. Expand opportunities for students to explore emerging technologies related to careers.

1.viii. Develop a statewide initiative to promote inquiry-based teaching.

1.ix. Provide technical assistance to Local Education Agencies, especially high need, in collecting and analyzing data on the quality and impact of library media programs using technology tools.

1.x. Provide technical support for the use of advanced technology incorporated into the curricula to develop and enhance information literacy, information retrieval, and critical thinking skills of students through access to the library media center and library media programs.

Goal: To improve learning through the use of technology.

2. *Technology Integration Objective*: Align the use of technology with local, state, and national content standards and curricula to enhance learning and enrich teaching.

Rationale: Standards are broad statements that describe student knowledge, skills, and abilities, establishing a target for learning across grade levels and content areas. Aligning technology use in the curriculum to standards insures that each learner obtains the greatest educational benefit, preparation for real-world experiences.

Indicators:	Benchmarks: (Target year 2005)	Examples of Sources of Evidence/ Data Collection Methods:
2a. The curriculum must be designed to actively involve the student in the learning process through the use of technology.	2.1 All teachers use multiple assessment strategies including performance-based assessments linked to state standards. 2.2 All teachers design learning activities using technology that focus on experiential learning and emphasize student action.	School improvement plans Lesson plans Student Portfolios SACS Reports Student projects Types of evaluation used by teachers
2b. Instruction includes a variety of technology tools and online resources.	2.3 All students generate products and projects using extensive and diversified technology resources.	Lesson plans Student Portfolios and Projects Observations PEPE
2c. Instruction prepares students for the real world.	2.4 All teachers assign real-world activities using technology that emphasize collaboration, communication and decision-making.	Student Projects Observations Industry standards Community partnerships Lesson plans PEPE
2d. Technology is used to attain curricular goals.	2.5 All teachers make use of appropriate technology commensurate with the targeted content standards and level of student cognition.	Lesson plans PEPE Observations Surveys
2e. Technology is used to gather and analyze data for improving student achievement.	2.6 All teachers use technology to collect data and monitor student progress. 2.7 All administrators use technology to collect data to assess instructional effectiveness and monitor student progress.	School Improvement Plans State scores

State Strategies

2.i. Provide a State Web Portal for educators to include the following:
- An online searchable database of the Alabama Courses of Study content standards,
- Development and maintenance of an online bank of lesson plans aligned to state standards,
- Suggested ways to incorporate into lesson plans real-world applications of technology, including productivity, communication, problem-solving and decision-making tools,
- Exemplary student technology products/projects,
- Current research and best practices in effective models of technology integration throughout the school program, and
- Establishment of web-based communities linking educators to share ideas on issues of immediate concern such as connecting higher education faculty and other outside experts to K12 educators in need of assistance.

2.ii. Promote, disseminate, and publicize uses of online databases and educational Web portals.

2.iii. Include use of online databases and educational Web portals in library literacy skills instruction, such as the Alabama Virtual Library, MarcoPolo, and the Alabama Learning Exchange.

2.iv. Train teachers, especially in high need areas, to use technology in the curriculum through professional development initiatives, flexible access to the library media center, student/teacher collaborative technology projects, higher education professional development, and other means such as, Teens and Teachers Teaming for Technology, ThinkQuest, Alabama Virtual Library, Alabama's Preparing Tomorrow's Teachers to Use Technology, Technology in Motion training, MarcoPolo, and the Alabama On-Line High School.

2.v. Develop an online template that systems can use to enter and correlate local curriculum with Alabama Courses of Study.

2.vi. Design and offer research-based professional development so that educators can incorporate the use of technology in making data-driven decisions based on student achievement data.

2.vii. Establish online systems, with appropriate privacy safeguards, for collecting and aggregating educational data and Local Education Agency required plans that allow widespread access for policymakers and instructional staff at all levels.

2.viii. Develop and deliver through the statewide intranet an online school system (Local Education Agency) comprehensive needs-assessment framework.

2.ix. Develop and disseminate online rubrics to assess student literacy skills.

Goal: To improve learning through the use of technology.

3. *Professional Development Objective:* Provide professional development that enables staff to become and remain proficient in the use of technology to improve learning.

Rationale: Successful technology use depends on professional development that is substantial (25% of the overall technology budget), systematic (just in time) and sustained (ongoing). Comprehensive professional development for technology includes not only the empowerment of teachers to employ technical skills and knowledge, but also to use them with strategies that infuse technology into the learning environment.

Indicators:	Benchmarks: (Target year 2005)	Examples of Sources of Evidence/ Data Collection Methods:
3a. Professional development addresses technology competencies necessary to job performance.	3.1 All faculty and staff are proficient, knowledgeable, and current in contemporary technology. 3.2 All administrators are able to conduct clinical observations of classroom teachers to determine the current and/or desired level of technology implementation.	Checklists Surveys Lesson plans Observations Online evaluation software
3b. Professional development opportunities build capacity within the faculty for using technology to improve teaching and make learning relevant and authentic.	3.3 All faculty and administrators meet local, state and national standards for integration of technology into the classroom. 3.4 Professional development models technology integration in all curriculum areas.	Observations Classroom lessons District Technology Plan Evaluation Summary Report Professional Development Plan School Improvement Plan
3c. Professional development provides experiences in aligning use of technology with standards and curricula.	3.5 All faculty match appropriate technology tools to instructional objectives.	Lesson plans Observations Curriculum guides Professional Development Plan Evaluation Summary Report
3d. Professional development for the use of technology and exploration of new technologies is ongoing throughout the school year.	3.6 Professional development activities are offered on-site, off-site, and online to address the technology needs of staff.	List of professional development hours and topics School Improvement Plan In-service agendas In-service Certificates of Completion Budgets

3.i. Provide technology professional development, especially to high need schools, including but not limited to on-site, off-site, and online delivery:
- Through Technology in Motion, MarcoPolo, Alabama Virtual Library, Alabama Learning Exchange, Alabama On-Line High School, Alabama Renaissance Technology Academy, videoconferencing for Technology Coordinators and Library Media Specialists, Alabama Educational Technology Conference, and other statewide conferences and meetings,
- By implementing new and emerging technologies,
- By using technology tools to make instructional decisions based on student achievement data,
- By including an advanced technology integration initiative for educators and administrators through programs, and
- By disseminating these opportunities through the media including videoconference, webcasts, regional in-service centers, and presentations at statewide conferences and meetings.

3.ii. Adopt technology standards for K12 teachers and administrators and align K12 policies for in-service teacher and administrator recertification standards with undergraduate, graduate, and administrator technology standards. This includes establishing time requirements for technology-related professional development for all certified staff and strengthening the technology component of personnel evaluation systems for all certified staff. In addition, it includes providing technical assistance to Local Education Agencies, especially those in high need, to align professional development with teacher and administrator standards.

3.iii. Adopt professional development standards that incorporate effective use of technology, and provide examples through modeling, webcasts, and other methods of dissemination.

3.iv. Develop and promote an endorsement/certification, recognition, and/or incentives for technology integration proficiency for teachers.

3.v. Develop an alliance with subject, grade, or position-specific professional organizations, i.e. Math, Science, Early Childhood, Library Media, Music, Health and P.E., Counselors, Principals, Special Education, Alabama Federal Programs, etc., to promote infusion of technology integration throughout the K12 curriculum.

3.vi. Provide a State Web Portal for educators to include the following:
- An online searchable database of the Alabama Courses of Study content standards,
- An online bank of lesson plans aligned to state standards,
- Suggested ways to incorporate into lesson plans real-world applications of technology, including productivity, communication, problem-solving and decision-making tools,
- Exemplary student technology products/projects,
- Current research and best practices in effective models of technology integration, and
- Establishment of web-based communities linking educators to share ideas on issues of immediate concern such as connecting higher education faculty and other outside experts to K12 educators in need of assistance.

3.vii. Coordinate and collaborate with higher education for technology professional development with graduate schools to improve preservice K12 education and strengthen in-service education as well as research, develop, and disseminate training modules for institutions of higher education to meet the undergraduate/graduate K12 teacher technology standards and administrator standards.

3.viii. Provide ongoing technology leadership and professional development programs for all administrators including training in the identification of effective and appropriate technology tools to meet instructional objectives.

3.ix. Coordinate an online technology self-assessment proficiency instrument for educators, administrators, and higher education faculty.

3.x. Develop and disseminate online assessment instruments to evaluate and improve technology and library media programs in the integration of technology.

3.xi. Publicize other recognized technology professional opportunities for teachers such as Technology Scholarship Program for Teachers (TSPAT).

3.xii. Pursue business partnerships to recognize/reward technology-literate teachers working in rural/urban districts.

Goal: To improve learning through the use of technology.

4. *Environment Objective*: Cultivate lifelong learning communities in which the tools of technology support learning.

Rationale: Technology's effectiveness is dependent on the learning environment. The learning environment includes more than physical space. It also includes the overall school climate as fostered by administrators, faculty, and staff. Technology should be integrated throughout the curriculum for all learners regardless of economic and geographic location. It should be equitably distributed.

Indicators:	Benchmarks: (Target year 2005)	Examples of Sources of Evidence/ Data Collection Methods:
4a. Administrators initiate ideas for technology use and routinely use technology.	4.1 All administrators routinely use technology to increase personal productivity during the workday. 4.2 All administrators plan and design technology-enhanced learning venues that promote the application of technology in the classroom.	Student management and other software utilization Email Web resources Portfolios Financial management Personnel Evaluation System (PEPE) observation Monitoring LEA Plan
4b. Instructional staff initiates ideas for technology use and routinely uses technology.	4.3 All instructional staff routinely use technology to increase personal productivity during the workday. 4.4 All instructional staff create and maintain technology-enhanced learning venues.	Productivity software Telecommunication software Student management and other software utilization Personnel Evaluation System (PEPE) observation Monitoring LEA Plan
4c. The community works with school staff to provide expertise, support, and resources.	4.5 Schools establish and maintain community partnerships that focus on school technology use.	Letters of agreement with community partners Joint projects Advisory committee minutes Monitoring LEA Plan
4d. Learners use technology resources beyond school hours.	4.6 Learners use technology resources beyond school hours either before school, after school, or weekends.	Access to technology by community members Community programs Advisory committee Web resources Teacher plan books

Indicators:	Benchmarks: (Target year 2005)	Examples of Sources of Evidence/ Data Collection Methods:
4e. Learners use a vast array of technology-based tools to address and achieve specific learner outcomes.	4.7 All learners complete assignments using various types of technology.	Student assignments Portfolio and community projects School webpages Technology fairs Displays Distance learning and online coursework Checklists Personnel Evaluation System (PEPE) Monitoring

State Strategies:

4.i. Develop partnerships with community organizations as well as public and private universities to deliver technology instruction for programs, such as the Alabama Virtual Library and other technology applications.

4.ii. Develop promotional and educative technology resources for the community, parents, and certified personnel for utilization with parent-teacher organizations, in-services, and faculty meetings through video presentations, brochures, flyers, etc., including a training program for parents to use Internet resources with their children such as the Alabama Virtual Library and MarcoPolo.

4.iii. Encourage and provide technical assistance to Local Education Agencies, especially high need school districts and schools to establish cooperative programs and communication links with community agencies and organizations.

4.iv. Pursue business and community partnerships to recognize/reward technology-literate teachers working in rural/urban districts.

4.v. Provide ongoing technology leadership and professional development programs for all administrators including training in the identification of effective and appropriate technology tools to meet instructional objectives.

4.vi. Modify personnel evaluation standards to ensure teachers have students use technology to complete assignments.

4.vii. Monitor Local Education Agency professional development plans to ensure that all instructional staff receive training for personal productivity through technology.

4.viii. Provide online resources on demand for learners through the Alabama Virtual Library, Alabama On-Line High School, Alabama Learning Exchange, and MarcoPolo.

4.ix. Establish online systems for collecting and aggregating educational data for Local Education Agency required plans and allow widespread access to it, with appropriate privacy safeguards for policymakers and instructional staff at all levels.

4.x. Develop an online template format that systems may use to enter and correlate local curriculum with Alabama Courses of Study.

4.xi. Implement a research-based statewide technology assessment for Local Education Agencies based on state and system technology plans.

4.xii. Research the privacy regulations and the technical feasibility of transferring student records between Local Education Agencies online.

4.xiii. Research and develop procedures for the adoption of online textbooks.

4.xiv. Develop and disseminate online assessment instruments to evaluate and improve technology and library media programs in the integration of technology.

Goal: To improve learning through the use of technology.

5. *Access Objective:* Provide every learner with the technological tools to access and process information.

Rationale: Technology provides teaching and learning opportunities that were previously unavailable. Learners must have access to technology tools in order to process information and connect to the World Wide Web. Connecting learners to the world beyond the classroom brings relevant, real-life context to the study of basic skills, work skills, and critical thinking. This connection provides an important link between homes, schools, and communities. Opportunities for students to access information resources, communicate with experts and peers, and make contributions to knowledge bases through electronic communications is essential.

Indicators:	Benchmarks: (Target year 2005)	Examples of Sources of Evidence/ Data Collection Methods:
5a. Connectivity in classrooms, administrative offices, and other instructional spaces are adequate to support current and growing demands created by the learning, communication, and administrative requirements of the education system.	5.1 All classrooms, administrative offices, and other instructional spaces have high-speed Internet connections adequate to support learning.	Surveys, checklists, on-site visits Inventory Monitoring LEA Plans
5b. All classrooms and other instructional spaces have an installed base of modern Internet-enabled computers.	5.2 Every district has at least a 5:1 student-to-computer ratio of modern Internet-enabled computers (not counting core-specific labs and media centers).	Surveys, checklists, on-site visits Inventory Monitoring LEA Plans
5c. Each school building has technology tools to support the learning, communication, and administrative goals of the education system.	5.3 The ratio of students to technology tools meets the following (minimum): ‣ Digital Cameras 250:1 ‣ Scanners 250:1 ‣ Printers Modern 125:1 [Network, laser, color] ‣ Digital Projectors, 25:1 Or TV displays ‣ Assistive Devices [as needed] 5.4 Distance and online learning is available to all learners.	Surveys, checklists, on-site visits Inventory Monitoring LEA Plans

Indicators:	Benchmarks: (Target year 2005)	Examples of Sources of Evidence/ Data Collection Methods:
5d. All media centers have an installed base of modern computers and administrative software to support the learning goals of the education system.	5.5 All media centers have at least a 75:1 student-to-computer ratio of modern Internet-enabled computers. 5.6 All media centers use administrative software to manage their collections.	Surveys, checklists, on-site visits Administrative Software Inventory Monitoring LEA Plans Administrative Reports
5e. All schools have the ability to use technology to connect home (and school) with school and community.	5.7 Students have access to email. 5.8 All schools use technology to communicate with parents (progress reports, report cards, newsletters, email). 5.9 All schools use webpages to communicate. 5.10 All Library Media Centers provide learners with electronic search capabilities in the classroom.	Administrative software using email address component Electronic Publishing software for newsletters Software for generating electronic reports Networked automation software in library media centers Software for generating webpages Webpage online
5f. All administrative offices have an installed base of modern technology tools to support the learning, communication, and administrative goals of the education system.	5.11 Every district has at least a 1:1 administrator/staff-to-computer ratio of modern Internet-enabled computers and technology tools.	Surveys, checklists, on-site visits Inventory Monitoring LEA Plans

State Strategies

5.i. Promote and support the technology component of the Alabama School Board of Education technology adequacy equity standard to include the following:

- High Speed Internet connectivity,
- Adequate student, teacher, and administrator-to-computer ratios, and
- Adequate availability of technology tools such as printers, multimedia projectors, scanners, digital cameras, and assistive devices as needed.

5.ii. Develop a public relations plan to increase public awareness of the technology availability, costs, and needs of Alabama schools and school systems.

5.iii. Develop and maintain an educational Web portal for educational resources for all learners (students, teachers, staff, administrators, parents, community members, business owners, and citizens).

5.iv. Provide access to distance and online learning for all learners, especially high need, through technology-based programs such as Alabama Virtual Library, Alabama Learning Exchange, Alabama On-Line High School, and MarcoPolo.

5.v. Develop and deliver an online school system comprehensive needs assessment plan for use by Local Education Agencies in all required plans.

5.vi. Promote and develop an online form reporting system for the gathering of information such as Local Education Agency Technology Plans, Professional Development Plans, and other traditional paperwork.

5.vii. Report and collect technology data for state, system, and school report cards.

5.viii. Assess and recommend revisions to state procurement laws in the area of technology.

5.ix. Create state contact and database for research, promotion, and technical assistance in areas related to distance learning, such as the Alabama On-Line High School and videoconferencing.

5.x. Develop promotional and educative technology resources for the community, parents, and certified personnel for utilization with parent-teacher organizations, in-services, and faculty meetings, through video presentations, brochures, flyers, etc.

5.xi. Require the incorporation of technology wiring in new and renovated buildings as part of the capital improvement plan.

5.xii. Add technology component to the new and renovated facilities assessment checklist for construction.

5.xiii. Connect every school system to a statewide intranet.

5.xiv. Provide leadership and technical assistance to Local Education Agencies, especially high need, for the acquisition of high-speed Internet access, adequate networking funding, and other educational resources provided through the E-Rate funding for use in the school systems.

5.xv. Complete the state plan to standardize the student management package and research the feasibility of providing network access to parents for the purpose of accessing student progress reports, report cards, and attendance reports.

5.xvi. Create state contact to coordinate ongoing development of the Alabama Learning Exchange Web portal for educators.

5.xvii. Develop a plan to support districts in their efforts to implement district and school webpages through hosting, templates, and links to the Alabama Learning Exchange.

5.xviii. Assist in the development of the Alabama Virtual Library and support increased funding.

5.xix. Continue to develop and expand the Alabama On-Line High School especially in high need areas.

5.xx. Develop initiatives and policies to implement home and classroom electronic access to school, academic, and public libraries through resource sharing networks and Internet links.

5.xxi. Assist systems in collecting and analyzing data on the quality and impact of library media programs using technology tools.

5.xxii. Provide technical assistance, especially in high need areas, to include the effective use of technology in collecting and analyzing data in the library media programs to assess student and teacher access to advanced technology and collection development planning through library automation systems.

5.xxiii. Provide technical assistance to school systems, especially in high need areas, in applying for federal funds for library media programs for integrating technology into instruction.

Goal: To improve learning through the use of technology.

6. *Cost of Ownership Objective*: Fund technical support, maintenance, and emerging technologies to sustain teaching and learning.

Rationale: The successful infusion of technology in the curriculum depends on several factors: hardware, software, staff development, adequate staffing, appropriate facilities, ongoing maintenance, and timely upgrades. Technology must be reliable for teachers to embrace it and use it daily. Help and support in the classroom are critical issues.

Indicators:	Benchmarks: (Target year 2005)	Examples of Sources of Evidence/ Data Collection Methods:
6a. Technology support is provided by educated staff or equivalent services.	6.1 The district provides at least 0.5 support persons to support every 30-60 users (staff only) in their efforts to achieve technology competency and to integrate technology into the curriculum.	Payroll, stipends, time sheets, student records, local technology plans SLEPS LEAPS Annual Report School Improvement Plan
6b. Technology resources are kept in operational use through regular maintenance and upgrades.	6.2 The district provides at least one (1) full-time technical support person (staff, student, or equivalent) for every 100-200 computers.	Payroll, stipends, time sheets, student records, local technology plans SLEPS LEAPS Annual Report
6c. The technology budget should increase yearly until it reaches the national average.	6.3 The technology budget represents at least 5% of the district's total budget, and includes professional development, hardware, software, retrofitting, support, replacement costs, and connectivity.	LEA Budget Annual Report
6d. Emerging technologies are explored and added in all subject areas to match industry standards.	6.4 The district's budget reflects purchases of emerging technologies and professional development.	LEA Budget SLEPS LEAPS Industry Standards

State Strategies

6.i. Ensure adequate and equitable access to technology by increasing technology funds according to the Alabama State Board of Education Adequacy Plan, including a full-time technology coordinator and adequate technicians to maintain equipment and network.

6.ii. Provide technical assistance to Local Education Agencies, especially high need, in developing policies and guidelines for the following:

- Child Internet Protection Act
- Guidelines for Web site development
- Equipment/materials donation
- Replacement of obsolete equipment
- Network security
- Inventory control
- Data privacy
- Disaster recovery (data and hardware)
- Exposure to advertising and commercialism
- Appropriate Use
- Technology infrastructure

6.iii. Provide technical assistance and professional development to support system-level technology and library media coordinators.

6.iv. Develop a public relations plan to promote community awareness of the total cost of ownership of technology.

6.v. Coordinate efforts to pool grant writing resources and pricing and provide technical grant writing assistance, especially in high need areas.

6.vi. Provide technical assistance to Local Education Agencies, especially in high need areas, in developing effective technology plans and conducting needs assessments.

6.vii. Support schools in adopting long-term budget plans using the total cost of ownership approach and educate schools in its use.

6.viii. Continue to develop and support increased funding for the Alabama Virtual Library.

6.ix. Continue to develop and expand the Alabama On-Line High School.

6.x. Complete the state plan to standardize the student management package and research the feasibility of providing network access to parents for the purpose of accessing student progress reports, report cards, and attendance reports.

6.xi. Provide technical assistance for new and emerging technologies.

6.xii. Implement a plan to assist Local Education Agencies in developing School Technology Coordinators as resource persons in each school to support teachers in technology integration, implementation of the Technology Course of Study, and the Alabama Learning Exchange lesson plan bank.

TECHNOLOGY PLANNING

"While planning is a key to successful technology implementation and integration, planning for technology is not an end in itself. It is a process that strategically moves from vision to reality—from planning into practice." [viii]

Planning for the effective integration of technology into the curriculum and administrative functions helps to ensure that all money is spent wisely and that students will realize the full benefits of the investments.

GUIDELINES: SCHOOL AND SYSTEM TECHNOLOGY PLAN

Developing the Plan/Update

System

- The Local Education Agency (LEA) will be responsible for developing a written school system technology plan, in cooperation with representative stakeholders; assistance will be provided by the Office of Technology Initiatives upon request. *(Note: For Accountability purposes, LEAs are required to keep documentation of technology plan meeting agendas, minutes, sign-in sheets, and other evidence of planning meetings.)*
- The system plan must include all the items listed in the guidelines, as well as any additional items set forth in course of study requirements, standards adopted by the SDE, statewide initiatives, and codes or legislation related to administrative and/or instructional technology.

School

- The Local Education Agency (LEA) will be responsible for ensuring that each school develops a written school technology plan, in cooperation with representative stakeholders.
- It is recommended that schools include at least the same components (as appropriate) in their plans as required in the system plan.

Filing/Submitting the Plan/Update

System

- Both the superintendent and technology coordinator must sign the system technology plan or update.
- The system technology plan must be submitted by the specified deadline beginning in 2001. Every year thereafter, an update must be submitted by the specified deadline.
- The System Technology Plan must be submitted in the prescribed format.

School

- Schools must have on file in the school office their current technology plan and yearly updates.
- Schools shall submit yearly a copy of their technology plan/update to the system technology coordinator by the deadline specified by the LEA.

Approval Process

System

- LEA superintendents will be notified by letter upon approval of the System Technology Plan by the Office of Technology Initiatives.
- If a plan is deficient, the LEA will be notified and the Office of Technology Initiatives will provide technical assistance in correcting deficits.

School

- The System Technology Coordinator is responsible for designing an approval process for each school. The same or similar approval process required by the SDE for System Technology Plans/Updates is recommended.

SYSTEM TECHNOLOGY PLAN

Checklist for Plan Approval

-Required Components-

General Information: *(Limit=1 Page)*

_____ Name of Technology Coordinator is provided.
_____ Signatures of Technology Coordinator and Superintendent indicating approval of the plan is provided.
_____ Representative Team Members, Job Position, Business or School are listed.

Background Information: *(Limit=3 Pages)*

_____ Brief Technology Integration Vision and Mission Statements are included.
_____ Brief History and Demographics of school system are included.
_____ Brief Current Status of Infrastructure of school system (Wiring, Network Filtering Methods, Networkable Computers, Hardware, Software, Telecommunications Capabilities, etc.) are provided.
_____ Brief Current Status of Technology Integration and Training for School System staff are provided.

_____ Brief Process of developing the plan and the Process for including other program required plans is described.
_____ A Process for Developing and Approving local School Plans is included.
_____ Supporting Documents, including Acceptable Use and Internet Filtering Policy (development process), and Inventory (Wiring, Network Filtering Methods, Networkable Computers, Hardware, Software, Telecommunications Capabilities, etc.), and other documents are listed and attached.

Needs Assessment(s): *(Limit=2 Pages)*

_____ Learning, Administrative, and Professional Development Needs Assessment(s) Results, Sources of Data, and Technology Needed are reported.

Action Plan: *(No limit)*

_____ At least one (1) Goal and six (6) Objectives are listed.
_____ Indicators, Benchmarks, and Strategies address the following:
(NOTE: Fulfillment of any state technology standards/requirements must be included in this section.)
_____ Learning _____ Professional Development _____ Access
_____ Technology Integration _____ Environment _____ Cost of Ownership
_____ A Timeline that includes a projected date of completion for each Strategy is provided.
_____ The Person(s) responsible to ensure that Strategies are completed is/are identified.
_____ Measurable/Observable Benchmarks are provided for each Strategy.
_____ Sources of Evidence/Data are provided with Benchmarks.
_____ A Budget and Source of Funding is projected for each Objective or Strategy.

Evaluation: *(No limit)*

_____ A systematic timeline and orderly method for the Planning Team to monitor, discuss, and report the overall status of the System Technology Plan strategies are provided.
_____ A Process to Modify the plan is provided (add, edit, delete).

School System: _____

Approved By: _____ Date Approved: _____

SYSTEM TECHNOLOGY PLAN FORM

General Information *(Limit= 1 Page)*

Years of Plan: _____

School System: _____ Date Submitted: _____

Approval of Superintendent: _____ Signature: _____
(Name)

Approval of Technology Coordinator: _____ Signature: _____
(Name)

Technology Planning Team		
Name	*Position*	*Business or School*

Background Information *(Limit= 3 Pages)*

- Vision Statement

- Mission Statement

- History of School System

- Demographics of School System

- Current Status of Infrastructure of School System (Wiring, Network, Hardware, etc.)

- Current Status of Technology Integration and Training

- How Plan was Developed *(Note: For Accountability purposes, LEAs are required to keep documentation of technology plan meeting agendas, minutes, sign-in sheets, and other evidence of planning meetings. Attach supporting documents in this section.)*

- How Plan was Developed in Coordination with other Required Plans and Programs

- Process for Developing and Approving Local School Plans *(Components and Procedures)*

- Supporting Documents—List Document Names and describe process used to develop each one *(attach actual documents).*

- Other Supporting Documents—List All Other Supporting Documents, and describe process used to develop actual documents.

Needs Assessment(s) *(Limit= 2 Pages)*

- List Needs—Identify needs based on needs-assessment surveys or other evaluation instruments in each of three categories (Learning, Administrative, Professional Development). *(Note: Adjust the number of rows as needed.)*

- Source(s) of Need—List those used in each category (Learning, Administrative, Professional Development).

- Results—Provide a brief summary of the results from the needs assessment(s) for each category.

Learning Need(s):	Sources and Results:

Administrative Need(s):	Sources and Results:

Professional Development Need(s):	Sources and Results:

ACTION PLAN *(No limit)*

Goal:

Objective #_____:

Indicator What will be seen if this objective is accomplished?	Strategy What steps/actions will be taken to accomplish this objective?	Benchmarks What is the measure of progress toward accomplishing this objective? (Number, %, or other quantifier)	Sources of Evidence What documents will be used to support findings?	Timeline What is the projected month/year of completion?	Person(s) Responsible Who is responsible for implementation and oversight?	Budget & Fund Source What is the projected cost and what funds will be used to accomplish this objective? ($ amounts)

EVALUATION *(No limit)*

- Status of Action Plan *(List the regular times during the school year that the team will meet to discuss the status of the Action Plan.)*

- Action Plan Adjustment *[Briefly describe the process the team will use to change the Action Plan elements that are not working (add, edit, delete.)]*

ENDNOTES

[i] (1997)*Live & Learn*, The George Lucas Educational Foundation, pp. 14.

[ii] (2000). *National Education Standards for Teachers*, International Society for Technology In Education, ISTE.

[iii] Kulik, J. A. (1994). "Meta-analytic Studies of Findings on Computer-Based Instruction," in E.L. Baker, and H.F. O'Neil, Jr. (Eds.), *Technology Assessment in Education and Training.* Hillsdale, NJ: Erlbaum.

[iv] Sivin-Kachala, J. (1998). *Report on the Effectiveness of Technology in Schools, 1990-1997*. Washington DC: Software Publisher's Association.

[v] Sun, J., with Heath, M., Byrom, E., Phlegar, J., and Dimock, K. (2000). *Planning into Practice.* Durham, NC: SouthEast and Islands Regional Technology in Education Consortium (SEIR*TEC).

[vi] Anderson, M., Foertsch, M., Hawkes, M., McNabb, M., Raack, L and Valdez, G. (1999). *Computer-Based Technology and Learning: Evolving Uses and Expectations*. Oak Brook, IL: North Central Regional Educational Laboratory.

[vii] Coughlin, E., and Lemke, C. (1998). *Technology in American Schools: Seven Dimensions for Gauging Progress, A Policymaker's Guide*. Santa Monica, CA: The Milken Family Foundation.

[viii] Sun, J., with Heath, M., Byrom, E., Phlegar, J., and Dimock, K. (2000). *Planning into Practice.* Durham, NC: SouthEast and Islands Regional Technology in Education Consortium (SEIR*TEC).